

Notice of Allowability

Application No.

10/679,649

Examiner

Mirellys Jagan

Applicant(s)

RAMAMURTHY ET AL.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 6/9/06.
2. ☒ The allowed claim(s) is/are 1,2,9-14,23-29 and 33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Jenny Ko on August 10, 2006.

3. The application has been amended as follows:

Claims 14, 28, and 29 have been replaced with the following claims:

14. A method of determining a temperature of an ultrasound transducer, the method comprising:

(a) using connections to connect elements of the ultrasound transducer to components of an ultrasound imaging system; and

(b) determining a temperature of the ultrasound transducer using the components in the ultrasound imaging system, the determining being from signals received on the connections, which are also used for acoustic imaging signals.

28. A method of determining a temperature of an ultrasound transducer, the method comprising:

(a) receiving signals transmitted from at least one transduction element of the ultrasound transducer;

(b) determining a temperature-dependent property of the ultrasound transducer from the received signals; and

(c) determining a temperature state of the ultrasound transducer in response to determining the temperature-dependent property; and

further comprising transmitting multiple times, receiving the signals comprises receiving the signals in response to the transmitting multiple times, and wherein determining the temperature-dependent property comprises determining from a combination of received signals responsive to the transmitting multiple times.

29. A method of determining a temperature of an ultrasound transducer, the method comprising:

(a) receiving signals transmitted from at least one transduction element of the ultrasound transducer;

(b) determining a temperature-dependent property of the ultrasound transducer from the received signals; and

(c) determining a temperature state of the ultrasound transducer in response to determining the temperature-dependent property;

further comprising transmitting multiple times, wherein receiving the signals comprises receiving the signals at different apertures on the ultrasound transducer, and the received signals are responsive to the transmitting multiple times;

further comprising:

(d) shifting at least a first one of the received signals relative at least a second one of the received signals;

wherein determining temperature-dependent property comprises determining from a combination of at least the shifted first received signal and the at least one second received signal.

4. The following is an examiner's statement of reasons for allowance:

The prior art of record does not disclose or suggest the following in combination with the remaining limitations of the claims:

A method of determining a temperature of an ultrasound transducer, the method comprising determining an acoustic property of a lens or window of the transducer (see claim 1); determining the temperature of the transducer with components in the imaging system from signals on connections also used for acoustic imaging signals; the connections corresponding to the connecting of the elements to the ultrasound imaging system (claim 14); determining a temperature-dependent property of the transducer from the received signals for a plurality of locations along a lens or window of the transducer (see claim 27); determining the temperature-dependent property from a combination of received signals responsive to the transmitting

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multiple times (see claim 28); shifting at least a first one of the received signals relative at least a second one of the received signals (see claim 29).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Friday from 11AM to 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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MJ

August 11, 2006


GAIL VERBITSKY
PRIMARY EXAMINER